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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,201	05/03/2001	Richard John Moore	GB920000064US1	6511

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EXAMINER
CAO, DIEM K

ART UNIT	PAPER NUMBER
2126	

DATE MAILED: 11/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/848,201	MOORE, RICHARD JOHN
	Examiner	Art Unit
	Diem K Cao	2126

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>30 September 2004</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-16</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>5,7-10,15 and 16</u> is/are allowed.

6)☒ Claim(s) <u>1-4 and 11-14</u> is/are rejected.

7)☒ Claim(s) <u>6</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-16 remain in the application. Applicant has amended claims 5, 7 and added

claims 15-16.

Allowable Subject Matter

2.   Claims 5, 7-10, and 15-16 allowed.

3.   Claim 6 would be allowable if rewritten to overcome the rejection(s) under 35

U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of

the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

5.   Claims 1-2, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Deianov et al. (U.S. 6,529,985 B1) in view of Hammond (U.S. 6,463,583 B1).

6.   **As to claim 1**, Deianov teaches loading the interception module to occupy a location in a

memory (the present invention dynamically loads an interception module 111 into the operating

system kernel 109; col. 5, line 66 – col. 6, line 1), redirecting the one or more API calls by

creating an alias to any page containing an entry point for an API call to be intercepted and to

write the address of the interception module to the alias (Pointers 114 to system calls 115 are

located in an operating system interrupt vector table 113 ... to the interception module 111 to

execute the interception module 111; col. 6, lines 5-38), providing to any instances of the

interception module the original entry points for the one or more API calls (the present invention

makes a copy 116 of a pointer 114 to each system call 115 to be intercepted; col. 6, lines 16-17,

the interception module 111 utilizes the saved copy of the pointer 116 to make the system call

115 for the process; col. 8, lines 21-23), and the interception module being adapted to selectively

provide modified functionality for the intercepted API calls (When a call is made ... not all

system calls need be intercepted; col. 6, lines 35-40, and alternative object code to be executed

instead of the system call ... system call wrapper; col. 1, line 64 – col. 2, line 2).

7.   However, Deianov does not teach the activation module being adapted to carry out the

loading to a location in a shared region of virtual memory as long as interception of the API calls

is required, redirecting, and providing steps. Deianov uses the term "the present invention" that

carries out all the above steps except for a location in a shared region of virtual memory as long

as interception of the API calls is required. Hammond teaches an activation module (injection

application) being adapted to load the interception module (injection dynamic link library) to

occupy a location in a shared region of virtual memory as long as interception of the API calls is

required (An injection DLL called INJECT.DLL is loaded from the injection application into a

second pre-determined memory location within an area of shared memory; col. 8, lines 36-67,

process's virtual address space; col. 7, line 58, and the injection DLL is loaded ...Win32

processes; col. 8, lines 56-63).

8.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the teaching of Deianov and Hammond because Hammond teaching of

loading the interception module would improve the flexibility of Deianov's system by

dynamically injecting the execution logic into a shared memory space of a window operating

system (col. 2, lines 56-58)

9.   **As to claim 2**, Deianov does not explicitly teach the activation module is adapted to load

the interception module at system initialization time. Hammond teaches the activation is adapted

to load the interception module at system initialization time (an injection application is started

with a kernel application … for the windowed operating system; col. 5, lines 46-58).

10.   **As to claim 12**, Deianov does not explicitly teach one or more API calls to be intercepted

is a call for allocating memory, however, Deianov teaches a system call performs some system

operations, such as the access of a system hardware or software (col. 1, lines 31-44). It would

have been obvious the call for allocating memory could also be intercepted.

11.   **As to claim 14**, Deianov teaches computer program code stored on a computer readable

storage medium for intercepting API calls when executed on a virtual memory computer system,

the program code comprising the system of claim 1 (A computer memory 101 … into the

operating system 117; col. 5, lines 50-66).

12.   Claims 3-4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Deianov et al. (U.S. 6,529,985 B1) in view of Hammond (U.S. 6,463,583 B1) further in view of

Pietrek (Learn System-Level Win32 Coding Techniques by Writing an API Spy Program).

13.   **As to claim 3**, Deianov does not teach the activation module is adapted to read a

configuration file, the configuration file containing data defining the API calls to be intercepted

and the manner in which the API calls are to be modified, the activation module being adapted to

write the configuration data to an area of shared memory and to provides to all instances of the

interception module the location of the shared memory. Pietrek teaches the activation module is

adapted to read a configuration file, the configuration file containing data defining the API calls

to be intercepted (the spy DLL reads an input file ... about the function's parameters; page 8),

the activation module being adapted to write the configuration data to an area of memory (the

code portion of the stub ... on the stack; page 8), and to provides to all instances of the

interception module the location of the shared memory (As the spy DLL builds each stub ... the

import section; page 9).

14.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the teaching of Pietrek and Deianov because Pietrek teaches a method to

monitor multiple applications by creating an extensible list of functions to be intercepted and no

modification to the programs (page 1).

15.   **As to claim 4**, Deianov does not teach an instance of the interception module is

responsive to receiving a redirected API call to load itself within the process making the API call

so that a segment of global data is made available to each instance of the interception module.

16.   Pietrek teaches an instance of the interception module is responsive to receiving a

redirected API call to load itself within the process making the API call so that a segment of

global data is made available to each instance of the interception module (By freezing the target

process ... code for the program; pages 5-6).

17.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the teaching of Deianov and Pietrek because Pietrek teaches sharing data

to multiple instances of the interception module would improve the performance by reducing the

memory usage.

18.   **As to claim 11**, Deianov does not teach the interception module is adapted to check that

it is not being called recursively prior to loading itself. However, Deianov teaches recursively

execute the wrapper is avoided by check on the flag (col. 7, lines 29-40 and col. 8, lines 44-55).

It would have been obvious to one of ordinary skill in the art to include checking of recursively

called the Deianov's system because it provides a method not to load multiple instance of the

same code into the process address space.

19.   Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deianov et al.

(U.S. 6,529,985 B1) in view of Hammond (U.S. 6,463,583 B1) further in view of Admitted Prior

Art (APA).

20.   **As to claim 13**, Deianov does not teach the activation module and the interception

modules are adapted to operate on OS/2 Warp Version 3 SMP and Warp Version 4.5 operating

systems. Deianov teaches the activation module and the interception modules are adapted to

operate on the multitasking system (col. 1, lines 8-11). APA teaches OS/2 Wrap Version 3 SMP

and Warp Version 4.5 operating system for used by 32-bit applications (page 2, lines 18-25). It

would have been obvious to apply the teaching of APA to the system of Deianov because it

provides a method to run the application in different operating systems.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Diem K Cao whose telephone number is (571) 272-3760. The

examiner can normally be reached on Monday - Thursday, 9:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should be mailed to:
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Diem Cao

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